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09/989,881	11/21/2001	Takayuki Sato	04610.005001	1502

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EXAMINER

KHOO, FOONG LIN

ART UNIT	PAPER NUMBER
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2664

DATE MAILED: 11/07/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 09/989,881	Applicant(s) SATO, TAKAYUKI	
	Examiner F. Lin Khoo	Art Unit 2664	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 12 October 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,3-7,15,17-22,24-29 and 31-35 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,3-7,15,17-22,24-29 and 31-35 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1, 15, 22, 29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ambe (U.S. Patent No. 6,873,602) in view of Meier (U.S. Patent No. 6,847,620).

Regarding Claim 1, Ambe discloses a method of processing and transmitting packets over a VLAN system (Fig. 1 col 4, lines 29-32) in which an administrative computer (Fig. 1, server 3) and at least one terminal (Fig. 1, elements 1-1 to 1-5) are linked each other via at least one interconnecting device (Fig. 1, element 2-1), comprising:

storing a first reference table regarding administrative information including a VLAN identifier, an IP address, and a subnet mask, associated with a MAC address of the terminal, in a memory of the administrative computer (Fig. 5, Fig. 7, Fig. 8, Fig. 9; col 6, lines 16- 50; col 7, line 18 through col 8, line 17. Fig. 8 terminal data table can be associated with the first reference table);

Art Unit: 2664

storing a second reference table regarding the administrative information in a memory of the interconnecting device under control of the interconnecting device, judging whether a received packet includes a tag (Fig. 1; col 4, lines 26-42. The first storage unit 2a stores information to be used in identifying a specific logical group (i.e., virtual LAN) to which the source terminal of a received packet belongs is associated with the second reference table);

in a case where the received packet is judged to include the tag transmitting the packet, wherein the tag is removed from the packet before transmitting the packet when the packet is transmitted to a terminal which belongs to the interconnecting device depending on the second reference table (col 4, lines 21-25) and

in a case where the received packet is judged not to include the tag, judging whether a source MAC address of the received packet exists on the second reference table (col 4, lines 37-42),

in a case where the source MAC address is judged not to exist on the second reference table, sending the source MAC address to the administrative computer to update the administrative information on the first reference table, receiving the updated administrative information from the administrative computer, and updating the second reference table based on the updated administrative information (col 4, lines 37-42), attaching a tag including the VLAN identifier to the packet based on the administrative information on the second reference table, and transmitting the tagged packet (col 4, lines 18-21).

Art Unit: 2664

Ambe does not disclose a wireless network system Meier discloses a VLAN networking in a wireless environment which permits logical grouping of wireless devices/stations regardless of physical location. In addition, such mobility implies that devices can be moved from one switch port to another switch port without reconfiguring the network layer stack. The devices maintain a logical VLAN assignment (col 1, lines 46-51). It would have been obvious to a person of ordinary skill in the art to incorporate the teachings of Meier to the system of Ambe thereby providing wireless communication capability to the end systems with the additional flexibility of roaming and connecting from one VLAN to another VLAN for enhanced mobility.

Regarding Claim 15, Ambe discloses a recording medium for processing and transmitting packets over a VLAN system (col 16, lines 1-15) in which an administrative computer (Fig. 3, server 12) and at least one terminal (Fig. 3, elements 10-1 to 10-5) are linked each other via at least one interconnecting device (Fig. 3, element 11-2), comprising:

a computer-readable VLAN packet processing program executable under control of the interconnecting device (col 2, lines 43-62) for:

storing a first reference table regarding administrative information including a VLAN identifier, an IP address, and a subnet mask, associated with a MAC address of the terminal, in a memory (Fig. 4, element 11c) of the interconnecting device judging whether a received packet includes a tag (Fig. 3; col 4, lines 44-53; Fig. 5, Fig. 7, Fig. 8, Fig. 9; col 6, lines 16- 50; col 7, line 18 through col 8, line 17; col 5, lines 58-67. Fig. 8

Art Unit: 2664

terminal data table can be associated with the first reference table stored in the storage unit 11c);

in a case where the receive packet is judged to include the tag, transmitting the packet, wherein the tag is removed from the packet before transmitting the packet when the packet is transmitted to a terminal which belongs to the interconnecting device (col 5, lines 65-67),

in a case where the received packet is judged not to include the tag, judging whether a source MAC address of the received packet exists on the reference table (col 4, lines 37-42),

in a case where the source MAC address is judged not to exist on the reference table, sending the source MAC address to the administrative computer to update administrative information stored in the administrative computer, receiving the updated administrative information from the administrative computer, and updating the reference table based on the received administrative information (col 4, lines 37-42), attaching a tag including the VLAN identifier to the packet based on the administrative information on the reference table, and transmitting the tagged packet (col 4, lines 18-21).

Ambe does not disclose a wireless network system Meier discloses a VLAN networking in a wireless environment which permits logical grouping of wireless devices/stations regardless of physical location. In addition, such mobility implies that devices can be moved from one switch port to another switch port without reconfiguring the network layer stack. The devices maintain a logical VLAN assignment (col 1, lines 46-51). It

Art Unit: 2664

would have been obvious to a person of ordinary skill in the art to incorporate the teachings of Meier to the system of Ambe thereby providing wireless communication capability to the end systems with the additional flexibility of roaming and connecting from one VLAN to another VLAN for enhanced mobility.

Regarding Claim 22, Ambe discloses an interconnecting device (Fig. 3, element 11-2) for connecting at least one terminal in a VLAN system (col 5, lines 44-53) in which an administrative computer (Fig. 3, server 12) is resident the device comprising: a memory (Fig. 6, element 12d) for storing a reference table regarding administrative information including a VLAN identifier, an IP address and a subnet mask, associated with the MAC address of the terminal (Fig. 5, Fig. 7, Fig. 8, Fig. 9; col 6, lines 16- 50; col 7, line 18 through col 8, line 17. Fig. 8 terminal data table can be associated with the reference table); means for judging whether a received packet includes a tag (col 5, lines 65-67) and, means for, in a case where the packet is judged to include the tag, transmitting the packet, wherein the tag is removed from the packet before transmitting the packet when the packet is transmitted to a terminal which belongs to the interconnecting device depending on the reference table (col 5, lines 65-67), means for in a case where the received packet is judged not to include the tag, judging whether a source MAC address of the received packet exists on the second reference table (col 4, lines 37-42; col 6, lines 11-63; The VLAN configuration table in Fig. 5 stored in memory 11c in Fig. 4, is associated with the second reference table),

Art Unit: 2664

wherein in a case where the source MAC address is judged not to exist on the second reference table, the means sends the source MAC address to the administrative computer to update the administrative information, receives the updated administrative information from the administrative computer, and updates the reference table based on the received administrative information (col 4, lines 37-42), attaching a tag including the VLAN identifier to the packet based on the administrative information on the second reference table, and transmitting the tagged packet (col 4, lines 18-21).

Ambe does not disclose a wireless network system Meier discloses a VLAN networking in a wireless environment which permits logical grouping of wireless devices/stations regardless of physical location. In addition, such mobility implies that devices can be moved from one switch port to another switch port without reconfiguring the network layer stack. The devices maintain a logical VLAN assignment (col 1, lines 46-51). It would have been obvious to a person of ordinary skill in the art to incorporate the teachings of Meier to the system of Ambe thereby providing wireless communication capability to the end systems with the additional flexibility of roaming and connecting from one VLAN to another VLAN for enhanced mobility.

Regarding Claim 29, Ambe discloses a VLAN system (col 5, lines 44-53) comprising:
a plurality of interconnecting devices (Fig. 3, elements, 11-1, 11-2, 11-3, 11-4);

Art Unit: 2664

an administrative computer (Fig. 3, server 12) configured to be linked to the interconnecting device, wherein the administrative computer comprises a database storing records for the plurality of terminals, each of the records including a MAC address, a VLAN identifier, an IP address, a subnet mask and a device identifier (Fig. 5, Fig. 7, Fig. 8, Fig. 9; col 6, lines 16- 50; col 7, line 18 through col 8, line 17; col 9, lines 18-35; Fig. 7 shows the switch data table stored in the server 12 which is associated with a database storing records for the plurality of terminals with switch ID (device identifier). Fig. 8 terminal data table also stored in the server 12 which can also be associated with database storing records for a VLAN identifier, an IP address, a subnet mask); and

plurality of terminals (Fig. 3, elements 10-1 through 10-7) configured to be linked to one of the plurality of interconnecting devices, wherein each of the plurality of terminals stores a reference table regarding administrative information including a VLAN identifier, an IP address, and a subnet mask, associated with the MAC address thereof (Fig. 5, Fig. 7, Fig. 8, Fig. 9; col 6, lines 16- 50; col 7, line 18 through col 8, line 17; col 9, lines 18-35; Fig. 5 VLAN configuration table is stored in the switch. Fig. 7 shows the switch data table and Fig. 8 terminal data table stored in the server 12 which can also be stored in the interconnecting devices (switches) as reference tables);

wherein a first interconnecting device judges whether a packet received from a first terminal includes a tag (col 5, lines 65-67) and,

in a case where the packet is judged to includes the tag, the first wireless interconnecting device transmits the packet, wherein the tag is removed from the packet

Art Unit: 2664

before transmitting the packet when the packet is transmitted to at least one terminal which belongs to the first interconnecting device depending on the reference table (col 5, lines 65-67),

in a case where the received packet is judged not to include the tag, the first interconnecting device judges whether a source MAC address included in the received packet exists on the reference table (col 4, lines 37-42),

wherein in a case where the source MAC address is judged not to exist on the reference table, the first wireless interconnecting device sends a packet including the source MAC address to the administrative computer to update a corresponding record in the database, receives the updated record from the administrative computer, and updates the reference table based on the updated record (col 4, lines 37-53),

attaches a tag including the VLAN identifier to the packet based on the administrative information on the reference table, and transmits the tagged packet (col 4, lines 18-21),

and wherein, in response to the packet sent from the first interconnecting devices, the administrative computer obtains the source MAC address from the packet, compares a

device identifier of the one of the plurality of interconnecting device with a device

identifier of the interconnecting, based on the comparison result, updates the record in the database associated with the source MAC address, and sends a request for

updating the reference table to a second interconnecting device to which the first

terminal belonged while sends a request for updating the reference table to the first

interconnecting device (Fig.13 through Fig. 17; col 11, line 44 through col 14, line 46).

Art Unit: 2664

Ambe does not disclose a wireless network system Meier discloses a VLAN networking in a wireless environment which permits logical grouping of wireless devices/stations regardless of physical location. In addition, such mobility implies that devices can be moved from one switch port to another switch port without reconfiguring the network layer stack. The devices maintain a logical VLAN assignment (col 1, lines 46-51). It would have been obvious to a person of ordinary skill in the art to incorporate the teachings of Meier to the system of Ambe thereby providing wireless communication capability to the end systems with the additional flexibility of roaming and connecting from one VLAN to another VLAN for enhanced mobility.

3. Claims 3-7, 17-21, 24-28, 31-35 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ambe (U.S. Patent No. 6,873,602) in view of Meier (U.S. Patent No. 6,847,620) and further in view of Dobbins et al. (U.S. Patent No. 5,684,800).

Regarding Claims 3, 17, 24, and 31, Ambe and Meier disclose the limitations of claims 1, 15, 22 and 29, respectively. Ambe and Meier does not disclose wherein when the received packet is tagged and broadcast, whether or not the packet needs to be transmitted to the wireless terminal belonging to the wireless interconnecting device is judged according to a judgment whether or not a wireless terminal belonging to the same subnetwork as the subnetwork to which the destination IP address of the packet belongs exists in said administrative information, and, when the wireless terminal is judged to exist in said administrative information, the packet is judged to be transmitted

Art Unit: 2664

to the wireless terminal belonging to the wireless interconnecting device. Dobbins et al. discloses wherein when the received packet is tagged and broadcast, whether or not the packet needs to be transmitted to the wireless terminal belonging to the wireless interconnecting device is judged according to a judgment whether or not a wireless terminal belonging to the same subnetwork as the subnetwork to which the destination IP address of the packet belongs exists in said administrative information, and, when the wireless terminal is judged to exist in said administrative information, the packet is judged to be transmitted to the wireless terminal belonging to the wireless interconnecting device (Fig 4-B (steps 309, 310,311), col 5, lines 8-13 which describes a protocol-specific call processor to find the network protocol source and destination addresses. It is inherent that the protocol-specific is related to the IP-layer 3 protocol that uses IP addressing scheme with subnet determination). It would have been obvious to a person of ordinary skill in the art to incorporate the teachings of Dobbins et al. into the system of Ambe and Meier in order to provide a simple but robust mechanism that allows broadcast and/or multicast packets to be "flooded" through a switched domain and transmitted only to those users or ports defined for a particular VLAN (col 1, lines 8-12).

Regarding Claims 4, 18, 25 and 32, Ambe, Meier and Dobbins et al. disclose the limitations of claims 3, 17, 24 and 31, respectively. Further, Dobbins et al. discloses wherein in the judgment whether or not the wireless terminal belonging to the same subnetwork as the subnetwork to which the destination IP address of the packet

Art Unit: 2664

belongs exists in said administrative information, when the wireless terminal is judged not to exist in said administrative information, a VLAN identifier is obtained from the packet to judge whether or not the VLAN identifier exists in said administrative information, and, when the VLAN identifier is judged to exist in said administrative information, the packet is judged to be transmitted to the wireless terminal belonging to the wireless interconnecting device (Fig 4-B (step 312), col 5, lines 14-16 and col 6, lines 13-20).

Regarding Claims 5, 19, 26 and 33, Ambe, Meier and Dobbins et al. disclose the limitations of claims 4, 18, 25 and 32, respectively. Further, Dobbins et al. discloses wherein in a case where the received packet is the untagged packet and unicast, transferring of the packet to which the VLAN identifier obtained based upon the destination MAC address of the packet is attached is executed when whether or not the destination MAC address of the received packet exists in said administrative information is judged and the destination MAC address is judged not to exist in said administrative information, the acquisition of the VLAN identifier from said administrative information based upon the destination MAC address being executed by obtaining the source MAC address from the received packet and then obtaining the VLAN identifier corresponding to the source MAC address from said administrative information (col 4, lines 46-48 and col 8, lines 43-49 which describes a "generic" call processor where the VLAN-ID is determined by using source and destination MAC addresses and the original packet with the VLAN-ID in the packet is sent out the port on which the end system belongs).

Regarding Claims 6, 20, 27 and 34, Ambe, Meier and Dobbins et al. disclose the limitations of claims 5, 19, 26 and 33, respectively. Further, Dobbins et al. discloses wherein in a case where the received packet is the untagged packet and broadcast, transferring of the packet to which the VLAN identifier obtained based upon the destination IP address of the packet is attached is executed when whether or not a wireless terminal belonging to the same subnetwork as the subnetwork to which said destination IP address belongs exists in said administrative information is judged and the wireless terminal is judged to exist in said administrative information, by obtaining the VLAN identifier of the wireless terminal from said administrative information and attaching the obtained VLAN identifier to the untagged packet (Fig 4-B (steps 309, 310, 311, 312), col 5, lines 8-16, col 7, lines 47-50 which describes the VLAN call processor that would take any packet it receives and then encapsulating the broadcast/multicast packet in a header, the header containing a list of VLAN-Ids on which the packet belongs. In the case of claims 6 and 20, the VLAN-ID can be determined based on the target (destination) IP address in steps 309, 310, 311 and 312 of Fig 4-B).

Regarding Claims 7, 21, 28 and 35, Ambe, Meier and Dobbins et al. disclose the limitations of claims 6, 20, 27 and 34, respectively. Further, Dobbins et al. discloses wherein in a case where the received packet is the untagged packet and broadcast, transferring of the packet to which the VLAN identifier obtained based upon the

Art Unit: 2664

destination IP address of the packet is attached is executed when a wireless terminal belonging to the same subnetwork as the subnetwork to which the destination IP address belongs is judged not to exist in said administrative information, by obtaining the source MAC address from the untagged packet and then obtaining the VLAN identifier corresponding to the source MAC address from said administrative information and attaching the obtained VLAN identifier to the untagged packet (col 7, lines 47-57).

Response to Arguments

4. Applicant's introduction of new limitation "in a case where the source MAC address is judged not to exist on the second reference table, sending the source MAC address to the administrative computer to update the administrative information on the first reference table, receiving the updated administrative information from the administrative computer, and updating the second reference table based on the updated administrative information" is disclosed by Ambe. It is obvious that the combination of Ambe with Meier and Dobbins et al. would provide all the limitations of the independent claims 1, 15, 22 and 29.

Conclusion

5. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

Art Unit: 2664

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

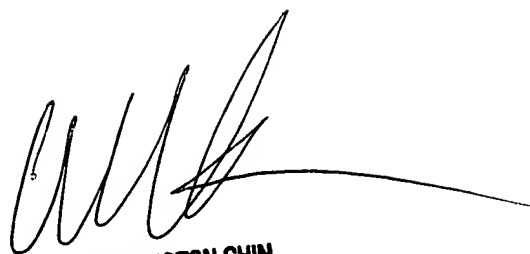
6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to F. Lin Khoo whose telephone number is 571-272-5508. The examiner can normally be reached on flex time.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wellington Chin can be reached on 571-272-3134. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Application/Control Number: 09/989,881
Art Unit: 2664

Page 16



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SUPERVISORY PATENT EXAMINER